

BOTOX®

The cult of youth

By Tsitaliya Mircheva

25 years ago, an accidental discovery changed the beauty industry forever. Canadian ophthalmologist Jean Carruthers used *botulinum toxin* to correct blepharospasm (twitching of the eye muscles) and realised that the temporarily paralysing effect of the toxin may be the key to her husband Alastair's quest for developing a treatment against frown lines. Clinical trials eventually led to the big breakthrough, but it was not always easy to find willing test patients. In an interview with *Reader's Digest* in April this year, Jean described the typical reaction the couple was faced with. "You want to inject what into my wrinkles?" people would exclaim. The concerns were understandable. A purified protein produced by bacteria, *botulinum toxin* is a nerve poison that is lethal at full strength. To prove that it was harmless in tiny doses, Jean volunteered to be treated herself – and famously has not frowned since 1987.

A new era

The Carruthers never thought about patenting their discovery, a mistake that cost them dearly. In 1989, U.S. healthcare company Allergan registered the name BOTOX® with the national Food and Drug Administration (FDA). Thirteen years later, they received the DDA's approval to market the use of *botulinum toxin (type A)* as a treatment which – in people aged 18 to 65 years – would temporarily improve the appearance of moderate to severe frown lines between the eyebrows (glabellar lines).

Today, BOTOX® is recognised by regulatory authorities in 80 countries worldwide as a medical treatment with 21 different applications; one of the most popular of these is the treatment

of excessive underarm sweating and increased muscle stiffness. Scientists also suggest its role in aiding people with depression. Psychiatrist Marc Axel Wollmer, who managed trials held jointly at Basel University and Hannover University, said that studies indicate a change in feeling if we deliberately produce a facial expression. One experiment used *botulinum toxin* on ten depressed patients. After two months, nine were no longer depressed.

It did not take long for *botulinum toxin* to become the new craze in cosmetic dermatology. According to Market Research company Mintel, 1.25 million non-surgical beauty treatments were conducted in 2010 alone, with *botulinum toxin* being the number one choice across the globe. In August 2012, Allergan announced that BOTOX® sales increased ten percent in the second quarter of the year to reach USD 461.2 million.

"We have some fabulous growth rates, even in the so-called old Europe," CEO David Pyott told news agency Bloomberg. In Switzerland, where the medical use of BOTOX® was first legalised in 1994, an estimated 60,000 surgical and non-surgical beauty treatments were conducted in the first half of 2012, with facelifts and *botulinum toxin* ranking amongst the top choices. The market has grown by five per cent overall.

Despite its popularity, the use of *botulinum toxin* remains a controversial topic in aesthetic medicine. It is one of the most popular subjects covered in both medical and non-medical papers. Meanwhile, many misconceptions remain.



Frozen in time

“Most misconceptions about botulinum toxin come from the lack of understanding about where and how it can be used,” says co-founder of cosmetic treatment centre Smoothline, Dr Snozzi. The clinic treated 4,000 clients in Switzerland last year (84 per cent women and 16 per cent men between 35 and 55). I ask Dr Snozzi if he has ever said no to a client. “In fact that happens very often,” he admits, “mostly when the indications are not right or the expectations are too high.”

“I always explain to my patients that *botulinum toxin* does not work in the sense of anti-aging,” adds Dr Bettina Rümmelein of the Dermatology Clinic at the University Hospital in Zurich, referring to the temporary nature of the treatment. “It can relax muscles and thus the frowning lines are not visible for a limited time of three to four months.”

However, the biggest problem is wrongful application. One area of criticism has been the administration of botulinum toxin by non-medical staff, such as beauticians, who may not have the right training with the product.

Ethics first

According to an article published on 29 July 2012 in *SonntagsZeitung*, the first suspected death associated with BOTOX® in Switzerland dates back to 2008. A three-year-old child with splayfoot died after being treated with the toxin, however it was never proven whether an overdose of the substance was responsible. “It is an urban myth that botulinum toxin is snake poison and that injecting the toxin

in your body is harmful if it is administered correctly,” Dr Snozzi is quick to explain. “Experts are very cautious when using *botulinum toxin*, and special control and safety measures are applied.” This special control and safety is now increasingly applied in relation to animal testing, another one of *botulinum toxin's* Achilles heels. *Doctors Against Animal Experiments Germany* estimate that currently at least 600,000 mice die a horrible death in the making of *botulinum toxin* each year – after the injection, some suffer from impaired vision, paralysis, respiratory problems and eventually suffocate after three to four days. Appalled by these inhumane practices, Switzerland became the first country in Europe to legalise animal-free *botulinum toxin* testing earlier this year.

Although *botulinum toxin* as a cosmetic treatment is growing in success year upon year, its future is not all about appearances, as the Carruthers stressed in a recent interview with *SonntagsZeitung*: Toxins can change the world and really improve people’s lives. Away from cosmetic dermatology, *botulinum toxin* already has a number of medical uses – and in a few years BOTOX® -jelly may be used to treat ischiatic nerve [sciatica]...”

Good to know

In Switzerland, three botulinum toxin products are licensed: Vistabel, BOTOX® and Dysport (Ipsen). Vistabel is approved for cosmetic use in the glabellar area (the 11 lines between the eyebrows) and Swissmedic (the Swiss agency for the authorisation and supervision of therapeutic products) only gives a permit for treating that facial area.

Information

smoothline
www.smoothline.ch

Dermatological Clinic Zurich
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